DOCUMENT RESUME

ED 444 480 IR 020 135

AUTHOR Parker, Angie
TITLE Trickle Down Technology: A Distance Education Approach to Professional Development.
SPONS AGENCY AT&T Foundation, New York, NY.
PUB DATE 2000-00-00
NOTE 7p.; In: Society for Information Technology & Teacher Education International Conference: Proceedings of SITE 2000 (11th, San Diego, California, February 8-12, 2000). Volumes 1-3; see IR 020 112.
PUB TYPE Reports - Descriptive (141) -- Speeches/Meeting Papers (150)
EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Distance Education; *Educational Technology; Elementary Secondary Education; *Faculty Development; Higher Education; Instructional Development; Student Role; *Teacher Education; Teacher Role
IDENTIFIERS *Technology Integration

ABSTRACT

The Trickle Down Technology Project offered the impetus needed to change the way both K-12 and university educators capitalize on technology in the classroom. The project had three key components: the modeling of technology in the university classroom; online technology workshops; and interactive communication among inservice and preservice teachers. Each of these components is discussed in this paper. As college faculty grew more comfortable with technology, they began to integrate computers into their classes, while helping K-12 teachers do the same. Concurrently, faculty modeled technology application as a part of the curriculum and helped their students develop lesson plans for K-12 classrooms. The teachers then implemented these lessons and provided online feedback to the preservice teachers. (MES)

Reproductions supplied by EDRS are the best that can be made
from the original document.

ED 444 480

Trickle Down Technology: A Distance Education Approach to Professional Development

PERMISSION TO REPRODUCE AND DISSEMINATE THIS MATERIAL HAS BEEN GRANTED BY

G.H. Marks

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

Dr. Angie Parker
Gonzaga University
Educational Technology
United States
aparker@soe.gonzaga.edu

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☐ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

Abstract: Technology is definitely a part of our world but all too often that world does not include the K-12 classroom. Technology seems to stop short because of lack of teacher training, lack of well developed lesson ideas, and the fact that universities are not offering courses that model the use of technology in the content areas. The Trickle Down Technology (TDT) Project offered a three-pronged solution: a collaboration between college faculty in education, current K-12 teachers, and pre-service teachers. While college faculty grew more comfortable with technology, they began to integrate computers into their classes, while helping K-12 teachers do the same. Concurrently, faculty modeled technology application as a part of the curriculum and helped their students develop lesson plans for K-12 classrooms. The teachers then implemented these lesson and provided online feedback to the preservice teachers.

Introduction

Educational technologies have been traced historically to the advent of movable type in the fifteenth century, to illustrations in seventeenth-century books, and to slate chalkboards in eighteenth-century classrooms (Jonassen, Peck and Wilson, 1999) . Educational technologies in the twentieth century include the first lantern slide projectors, radio, motion pictures, and most recently the personal computer. As each media emerged, educators realized the importance of professional training and the development of new teaching strategies that would transform the technology into a partner in the learning process rather than a substitute for the teacher.

The Trickle Down Technology (TDT) Project, funded through a grant from AT & T, offered the impetus needed to change the way both K-12 and university educators capitalize on technology in the classroom. The project had three key components: the modeling of technology in the university classroom, online technology workshops, and finally interactive communication among inservice and preservice teachers. Each of these components of the project will be discussed in this article.

IR020135

Modeling Technology in the University Classroom

BEST COPY AVAILABLE

All too often, the only technology training offered to education majors is a single course on instructional media. In that class, students are offered a directives on how to load software, access the Internet, and change the bulb in the overhead projector. To add to the problem, university faculty seldom model technology in their classes due to the time needed to prepare a lecture that integrates the new media.

In the TDT Project, three professors were paid a stipend to integrate technology into their daily teaching. They were also assigned a graduate student who was available to create PowerPoint materials, conduct Internet searches, and assist with the technology during the class. As the instructors became more proficient with the technology, the graduate student was phased out, thus motivating the instructors to become self-sufficient with the technology.

As the project began, instructors were tentative about using technology to convey the message of their lectures. However, within a few weeks, PowerPoint presentations became the norm and a "technology team" approach among the instructors was initiated. Through email, the sharing of ideas and techniques was suddenly a daily occurrence.

Modeling of technology integration as only one of the tasks assigned to the university instructors. The nine faculty were encouraged to participate in bi-monthly chats to discuss their success and concerns as the media became more pervasive in their classrooms. The online chats provided written evidence of the steep learning curve involved in re-thinking the way universities teach. Through the chats, it became evident that software and hardware were only a part of a much larger picture. Instructors were changing their thinking to embrace technology as a partner in the learning process. The faculty found that students could now actively share their new knowledge, rather than memorizing facts from lectures, textbooks, and computer software. One instructor commented , "The classroom computer is simply a tool, but if we think about technology as a learning tool that students learn *with*, not *from*, then the nature of student learning and that of instruction must change".

Online Chats among University Professors

Twice per month, the nine professors met online in a recorded chatroom to discuss the integration of technology into their classes. The chats offered a place for these nine, novice computer users to discuss the utilization of the computer to illustrate a point, to enhance a lecture, to provide a hands-on approach, or to problem-

solve with their students. Although the chat occasionally included discussion of technical difficulties, this was generally discourages in lieu of topics that focused on synthesis of technology with content.

The first chat of each month had a pre-defined agenda such as, "Using the Internet in the University Classroom". Professors were given the agenda several days prior to the chat as well as websites on the topic. They were asked to share personal experiences that related to the topic and comments on the readings.

The second chat of the month, was a open forum where any topic related to the TDT Project could be discussed. The three universities rotated the responsibility for hosting these open forums. If a topic in the forum required prior preparation, the university that was presenting the topic was asked to email the material to the other two colleges several days prior to the chat. Although the chats were scheduled for 30 minutes, most chats lasted well from 45-50 minutes. One chat, "The Time Consuming Nature of Technology", lasted well over 60 minutes and resulted in nearly 35 email messages during the week that followed.

Role of the University Student

The TDT Project not only changed the role of the instructors but also had a profound influence on the students. Students were assigned the task of developing two lesson plans per month that combined some facet of technology with the content area they were studying. The first lessons were low tech with little more than stale material combined with a word processor or the Internet. As the students "lived" the use of technology in their university classes, they began to see that integrating new media meant more than "updating the same old lesson".

By the end of the third month of the project, low-tech lesson plans were transformed into technology-rich ideas that focused on learning *with* technology. Students moved away from lesson that "taught technology" to lessons that utilized the classroom computer for simulations, research foundations, experimentation, and open-ended, student directed projects. Examples of these lesson plans are available online.

Each month nearly fifty lesson plans were carefully reviewed by the nine faculty for both content and use of technology. One lesson was selected each month for implementation in a classroom in each of the three states, Washington, Nebraska and Wisconsin. Teachers were given three weeks to institute the technology-rich plan and to provide online feedback to the student who developed the lesson. While the chat was dedicated to the student who authored the lesson and feedback from three teachers who executed it, other teachers, education students, and

BEST COPY AVAILABLE

professors were invited to join. In this way, the preservice teachers received a wide variety of feedback on their lesson ideas including a regional focus and the education requirements for the individual states.

Teachers were asked to respond to the following questions:

* What did your students like about the lesson?
* What would you change if the lesson were to be implemented again?
* How did the lesson fit with your curriculum content?
* What advice would you give the student author of this lesson?
* Explain any problems you encountered during the actual implementation of this lesson?
* What auxiliary learning did you see taking place during this lesson?

The chat was logged and available online to anyone participating in the project. The student author was given a printed copy for future review. Making the chat logs available online allowed the education students the opportunity to learn strategies for developing successful lessons that combine technology with content. The website recorded nearly 50 hits after each online lesson review.

Technology Training for Teachers

Most universities across the United States offer from one to five credits in Instructional Technology. This limited focus is insufficient to prepare teachers to succeed in classrooms that are wired for Internet, linked for internal communication, and programmed with attendance and assessment capabilities. Teachers are unprepared to utilize teaching strategies in combination with technology and content. The TDT Project attempted to rectify a portion of this void through a series of online professional development workshops. Each workshop focused on technology topics that were addressed in the lesson plans and one or more of the following: word processing, spreadsheet, database, PowerPoint, Hyperstudio or the Internet. Not only did the workshops provide a simple and quick way for teachers to develop personal skills with the software, the hands-on activities also outlined numerous techniques for synthesizing the software with current curriculum. The teachers (also university students and professors) could access the online lessons any time, twenty-fours per day, seven days per week. Each lesson was designed to take no

more than twenty minutes to complete so teachers could easily review the lesson during a short break or before or after school without taking an excessive amount of time away from their preparation or other instructional tasks.

Three Regions and the TDT Project

In addition to the enhancement of technology in the delivery of content, the TDT Project was instituted to identify regional educational perspectives including the influence of ethnic diversity and rural vs. urban diversity on technology in school systems throughout the United States. Only though this mix could the integration of technology in today's schools truly be studied. The diversity of the schools chosen provided the student teachers as well as the professors an insight into educational systems across the U.S. and the opportunity to chat with teachers who teach in distinct educational regions.

Although all schools fall under the jurisdiction of the United States Department of Education in Washington D.C., the manner in which that education is dispersed can vary from state to state depending numerous factors including: monies allocated to education, the number of students, and the geographic and ethnic diversity of the state. The number of computers per classroom, for example, varies widely from state to state and region to region. In the TDT Project the number of computers varied from one computer per classroom to fifteen. Some of the schools had a vast library of software while others had only the software purchased personally by the teacher. Some schools had parental support for the advancement of technology, especially the Internet, while others still feared the use of technology in the classroom. All of these factors added to the enriched knowledge gained not only by the student teachers at the three universities, but also the professors who must prepare students to teach in all geographic and ethnic regions of the United States and the world.

Summary

Throughout history, media and numerous technologies for learning have influenced the delivery of education. Most recently, for example, the computer has invaded instructional settings and has provided the possibility for improving the learning process. For that improvement to take place, the teacher must be provided with the methodologies and strategies for successfully combining technology with content. Students must be given the opportunity to learn *with* technology, not *from* technology and finally, universities must model the development

BEST COPY AVAILABLE

of technology-rich activities and lessons in all content areas. The TDT Project provided funding and support to accomplish these goals.

References

(Jonassen, D., Peck, K., and Wilson,B. (1999) Learning with Technology : A Constructivist Perspective, NJ: Prentice Hall, Inc.